

**SYSTEM FOR DIRECTED MOLECULAR INTERACTION  
IN SURFACE PLASMON RESONANCE ANALYSIS**

**ABSTRACT OF THE DISCLOSURE**

Disclosed is apparatus and method for controlled surface  
5 plasmon resonance analysis having a surface plasmon resonance  
sensor (200) with a derivatized surface plasmon layer (116) in  
optical communication with the sensor, derivatizing the surface  
plasmon layer and placing an analyte detection chamber (102) in  
fluid communication with the derivatized surface plasmon layer.  
10 The chamber is adapted (118, 120) for the generation of a molecular  
interaction bias across the chamber. A conjugate is provided  
between an analyte and a bias responsive element, wherein the  
analyte is reactive with the derivatized surface plasmon layer and  
the bias responsive element changes the response of the analyte to  
5 the molecular interaction bias. A conjugated analyte may be  
introduced into the chamber, generating a molecular interaction.